

PROJECT CHARGE: 1702

PROJECT TITLE: FILTRATION PHYSICS

PROJECT LEADER: R. W. Dwyer

PERIOD COVERED: October 1 - 31, 1985

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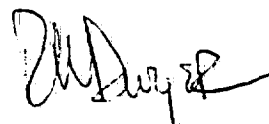
AMMONIA-SUGAR REACTION (Dwyer)

The preliminary phase of a program to determine the mechanisms of ammonia-carbonyl reactions was completed. This phase was concerned with a theoretical investigation of pyrazine formation from ammonia and α -hydroxyethanal reactants. MNDO molecular-orbital calculations were performed and the lowest energy pathway for the production of α -aminoethanal was determined.

SMOKE STUDIES (Cox and Morgan)

The light-extinction apparatus has been used to determine the contributions of true particulate matter and of condensed vapors to "TPM" on a puff-by-puff basis. Additionally, the average particle size of the smoke aerosol has been determined at 35 millisecond intervals during a single puff. This measurement presents us with a size profile during a puff. These techniques have been applied to low density rod samples.

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